September 2007 - Identification of problem statements that may address future public awareness campaign message development.
Gulf of Mexico Alliance

Codes		
	N	Nutrients
	R	Restoration
	WQ	Water Quality
	CR	Coastal Resiliency
	E	Education
	HI	Habitat Identification
	O	Other

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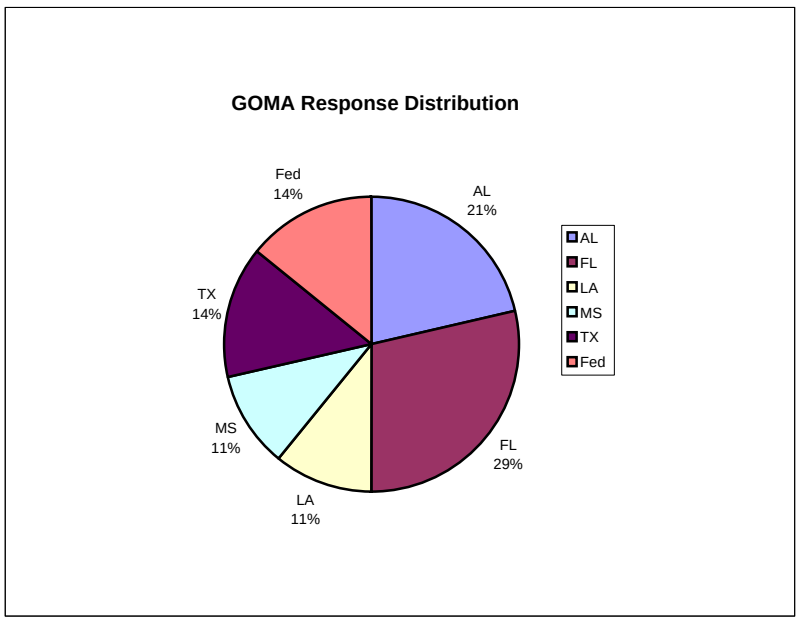
GOMA Gulf of Mexico Alliance Priority Issue Team State Leads and their Federal Support Staff were queried with three questions.
1. Please supply your top three favorite problems related to one or more of the above themes.
2. Please provide information for source material which is associated with the problem you stated.
3. Please list a behavior change you would like to see associated with the problem(s) you stated and the intended target audience

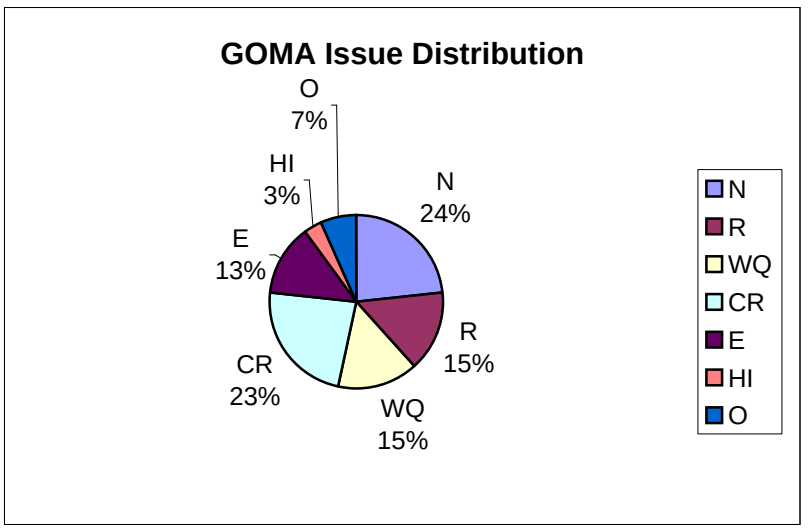
These themes reflected are:

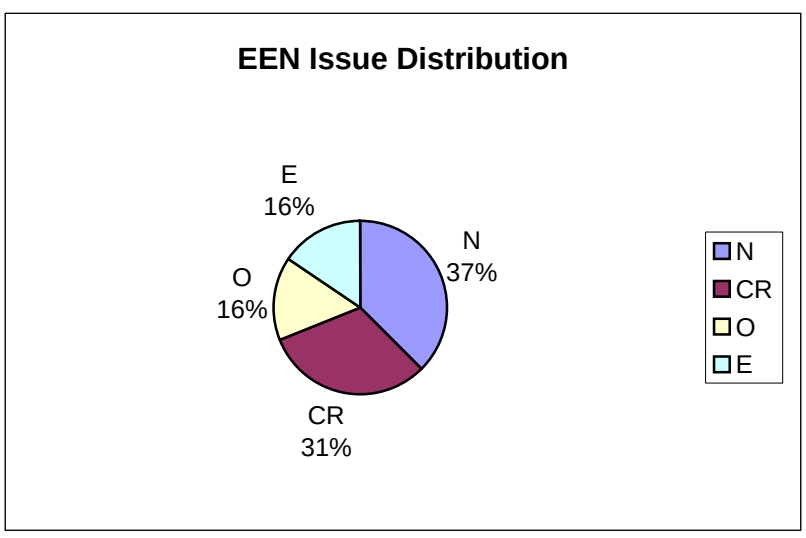
1 Hazard resilient coastal communities
2 Water quality for healthy beaches and shellfish beds
3 Wetland and coastal conservation and restoration
4 Identification and characterization of Gulf habitats
5 Reductions in nutrient inputs to coastal ecosystems

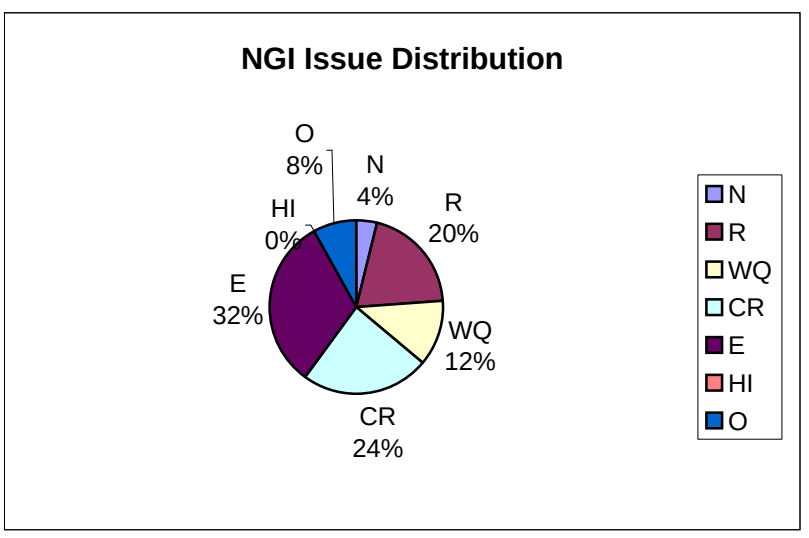
EEN The Gulf of Mexico Alliance Environmental Education Network held a workshop in June 2007. Participants were asked to list one behavior change they would like to see for the Gulf of Mexico and it need relate to the priority issues.

NGI The question was asked in a small workshop held on August 6, 2007, "What is your favorite coastal resiliency problem?"









2007 GOMA Inquiry

	Problem Statement	Source	Behavior Change	Additional Notes
CR	Coastal development and climate change are increasing potential coastal hazards (theme 1)	Pew Ocean Commission (2003)America's Living Oceans: Charting a Course for Sea Change	People adopt appropriate landscaping practices (e.g., Florida Yards: http://floridayards.org/).	I really think we should focus on local water bodies that people can relate to rather than the Gulf as larger entity. This could be patterned on the "My River" ads from the St. Johns River, but made for various sites around the gulf. The key is building an affinity, a sense of pride, and sense of ownership. For a few examples: Mobile Bay: My Bay; Apalachicola/Suwannee River: My River; Mississippi River: My Delta; Louisiana: My Bayou; Padre Island Texas: My Island
CR	Coastal development in and adjacent to sensitive environmental areas is damaging and destroying coastal and marine habitats. (themes 2, 3, 4, 5)	Subcommittee for Disaster Reduction, National Science and Technology Council Committee on Environment and Natural Resources. 2006. "Grand challenges for Disaster Reduction." Http://www.sdr.gov/SDRGrandChallengesforDisasterReduction.pdf	The rate of shoreline hardening around the Gulf of Mexico decreases, and the use of living shorelines" alternative increases. Target audience is property owners, developers, and contractors.	There are a host of publications on the impacts of coastal development. I have not attempted to list even a small subset of these, but rather focused predominantly on hazards-related refs. There is a project I would recommend as a possible resource re: how to change how development is done: Alternatives for Coastal Development project. http://www.csc.noaa.gov/alternatives/
CR	Coastal development in floodplains and storm surge zones is putting ever-increasing amounts of lives and property at risk, and impacting the mitigation benefits provided by natural areas. (themes 1, 3)	National Academies Press. 2006. Facing Hazards and Disasters: Understanding Human Dimensions. http://books.nap.edu/openbook.php?isbn=0309101786	Permitting of filling of coastal wetlands is decreased. Target audience is regulatory agencies. (If a policy change is needed to make this happen, then the audience is legislators and the general public - the public must advocate for it for the law to get passed. Similarly, if it's just an enforcement issue, public support is probably still a prerequisite to change…)	There are a host of publications on the impacts of coastal development. I have not attempted to list even a small subset of these, but rather focused predominantly on hazards-related refs. There is a project I would recommend as a possible resource re: how to change how development is done: Alternatives for Coastal Development project. http://www.csc.noaa.gov/alternatives/
CR	Local governments often seem to assume all new development is an economic gain, failing to recognize that some development may be not make sense economically because 1) there are environmental costs, 2) the local government will pay more in additional support services (e.g. infrastructure, tax cuts) than they receive in increased tax revenue, 3) hazard risk is increased, and 4) economic benefits accrue disproportionately to the developer as opposed to the community. (themes 1, 2, 3)	American Geophysical Union. 2006. "Hurricanes and the U.S. Gulf Coast: Science and Sustainable Rebuilding." Accessed at www.agu.org/report/hurricanes/.	Permitting of development in coastal high-hazard areas is decreased. Target audience is regulatory agencies. (Again, if a policy change is needed to make this happen, then the audience is legislators.)	There are a host of publications on the impacts of coastal development. I have not attempted to list even a small subset of these, but rather focused predominantly on hazards-related refs. There is a project I would recommend as a possible resource re: how to change how development is done: Alternatives for Coastal Development project. http://www.csc.noaa.gov/alternatives/
		Gulf of Mexico Alliance. 2006b. Gulf of Mexico Alliance: Community Workshop Summary Report. Report prepared by the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center.	Rate of conservation of wetland and floodplain areas increases (i.e. more acres per year.) Target audience includes government and NGO entities.	
		Accessed at www.dep.state.fl.us/gulf/events/files/CWReport_Final.pdf.	Local decision-makers (e.g. county commissioners, planning and zoning boards) can access more complete information on the full benefits and costs of new development than is currently available (e.g. including long-term infrastructure costs, lost environmental services, lost hazard mitigation benefits, etc.)	
		Lindell, M.K., W.G. Sanderson, and S.N. Hwang. 2002. "Local Government Agencies' Use of Hazard Analysis Information." International Journal of Mass Emergencies and Disasters. Volume 20. Pages 29 to 39.	More local governments allow and provide incentives for innovative zoning such as clustering and mixed use development in order to decrease environmental damages and foster enhanced mitigation.	
		Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority. 1998. "Coast 2050: Toward a Sustainable Coastal Louisiana." Louisiana Department of Natural Resources. Baton Rouge, LA.		
		National Academy of Sciences. 2006. "Mitigating Shore Erosion along Sheltered Coasts: Report in Brief." National Research Council.		
		Smith, R.A., and R.E. Deyle. 1998. "Hurricane Case Study: Opal in the Florida Panhandle." In Planning for Post-Disaster Recovery and Reconstruction, J. Schwab, American Planning Association. Pages 235 to 258.		
		Tampa Bay Regional Planning Council. 1995. "Emergency Preparedness: Future of the Region - Tampa Bay Strategic Regional Policy Plan." Tampa Bay, Tampa Bay Regional Planning Council. 3-1 to 3-31.		
		U.S. Army Corps of Engineers (USACE), New Orleans District. 2004. Louisiana Coastal Area (LCA), Louisiana Ecosystem Restoration Study, Final. Volume 1 of LCA Study - Main Report.		
		Working Group for Post-Hurricane Planning for the Louisiana Coast. 2006. "A New Framework for Planning the Future of Coastal Louisiana after the Hurricanes of 2005."		
CR	Fragmented (lack of holistic) approach to management of coastal and marine resources (all 5 themes above) causing inadequate policy development and implementation (i.e. single species management, political boundaries rather than ecological boundaries)	Congressional Commission on Ocean Policy (Ocean's Commission Report) and Pew Ocean Commission	More ecosystem based management approaches to natural resource administration (i.e. fisheries councils steering away from single species management, permitting being more inclusive of cumulative impacts to the ecosystem as a whole)	
CR	Laws/zoning are too lenient/ not based on sound science regarding development/rebuilding along coastal areas (themes 1, 2, 3, and 5)	Smart Growth Resource Library, http://www.smartgrowth.org/library/articles.asp?art=2839&res=1024 NEMO: http://nemonet.uconn.edu/programs/profiles.html	State/local government policies will become more strict in allowing variances to rebuilding/zoning along coastal areas: audience elected officials	
CR	Hazard Resilient Coastal Communities: 1) Not without long-term land use planning. 2) Not without recognition and response to increasing populations in hazardous areas. 3) How long can the U.S. taxpayer be asked to subsidize insurance for coastal living and still contribute billions more through FEMA and other catastrophe response venues year after year with no end in sight? 4) Without long-term land use planning which moves people and infrastructure out of vulnerable coastal areas, tax dollars and engineering efforts will not meet the challenges which are compounding each decade as coastal populations into vulnerable areas.			Remember, there is no such thing as a "natural catastrophe." Hurricanes are natural phenomena; the catastrophe is the lack of logical and wise land use planning for coastal areas. The tragedy is we that refuse to recognize and learn from these failures that have been compounded over many generations. Healthy Beaches and Shellfish Beds: See Hazard Resilient Coastal Communities; Conservation and Restoration See Hazard Resilient Coastal Communities; Reduction of Nutrients See Hazard Resilient Coastal Communities
CR	Excessive coastal and Great Lakes growth relates to all of the above themes but is more closely aligned with the first theme. There are too many business/industry owners and entrepreneurs and private home owner reconstructing in areas highly susceptible to destruction by future coastal hazards, i.e. hurricanes, flooding, and erosion, to include wind-shear and tidal surges. Significant strides are being made in improved construction codes and increased elevations. However, all coastal communities should think in terms of smart growth" and allow some of the former areas which had facilities destroyed by the 2004-2005 hurricanes to "come back" as green areas. These former slabs could be purchased by local (city and county) and state governments with assistance from the Federal government. In the best case scenario, these areas would benefit the coastal citizenry by being public and enjoyed by coastal residents and	NOAA, www.noaa.gov; NOAA Hurricane Center, www.nhc.noaa.gov; US Department of Interior www.doi.gov; National Park Service www.nps.gov; US Geological Survey www.usgs.gov; US Fish and Wildlife Service www.fws.gov; Bureau of Land Management www.bim.gov; US Ocean Action Plan (2004) www.ocean.ceq.gov/actionplan.pdf; US Ocean Report Card (2007) www.jointoceancommission.org; • U.S. Commission on Ocean Policy (2004), www.oceancommission.gov • COSEE, www.cosee.org • COSEE, National Geographic Society, NOAA, College of Exploration (2005), www.coexploration.org/ocealiteracy/docuemnts • Per Oceans Commission (2003), America's Living Oceans: Charting a Course for Sea	Increased numbers of public green areas/community parks along this nation's coasts-target the general public and media, as well as decision-makers from whom funding is being solicited; and city, county, state, and federal government officials. Hopefully, this problem can be "driven" by the grassroots citizenry living in these coastal and Great Lakes areas who will encourage the political leadership at the city, county, state, and federal government. And, the print, audio, and television media can help facilitate increased coastal hazard community resiliency.	

	CR	Lack of understanding among coastal planners and decision makers of the dynamic nature of coastlines. This leads to unrealistic risk assessments for coastal development, restoration, etc	Examples of all of these may be found in presentations given during the Gulf of Mexico restoration team's state-by-state workshops. These have been posted on the GOMA working website.	Indications that considerations of coastal change trajectories are first and foremost in decision making processes.	
	CR	Coastal development/alteration is leaving us more vulnerable to hurricane damage and other threats (themes 1 and 3)	There are lots of sources for information, but the main challenge seems to be getting the information into the right hands. An Inconvenient Truth is certainly one venue, but we utilize material from the Tampa Bay Estuary Program, Florida Wildlife Research Institute, and Tampa BayWatch for most things. They put out some great stuff!	Behavior change = Less degradation of coastal habitats OR (better yet), development that works around the existing beneficial elements of our protective coastlines. Development is NOT going to stop (too much at stake for too many high-stakes rollers), so a more cooperative approach would be more palatable. Target would be developers and issuers of permits.	
	CR	Repeated replacement of sand on barrier islands is expensive and of little to no value		Less or better thought out development of sensitive areas - Local leaders, developers	
	CR	Emergency plan of action (evacuation route, when to leave, what to take with you, connecting with family, when to return home, etc.) - Theme1	Red Cross has good resources on emergency plan of action	Families know when to leave, important documents to take with them, have a plan to find displaced family, and when to return.	
	CR	The increase in impervious surfaces associated with coastal development and the resulting impacts on water quality.		Adoption of flexible zoning ordinances/"green" zoning ordinances which promote/require smart growth, mixed use and green development - local government & developers	
	CR	Redevelopment of high hazard areas		Adoption of flexible zoning ordinances/"green" zoning ordinances which promote/require smart growth, mixed use and green development - local government & developers	
	CR	Development of barrier islands (Hazard resilient coastal communities)	Kathy Chu; USA TODAY; Aug 22, 2007; A.1	More miles of public and undeveloped beaches or restricted development within larger buffer areas defined by expected storm surge heights	Intended audience - local governments, developers; Measure development density per mile of beach within the storm surge zone
8	**E**	Quantity of debris (fishing line, trash, cigarette butts, boat equipment etc) left in the marine environment (themes 2 and 5)	Leave No Trace: http://www.lnt.org/ Monofilament Recovery and Recycling Program: http://fishinglinerecycling.org/index.asp	Raise percentage of proceeds that come from the sales of fishing/boating equipment, cigarettes/ alcohol sales that go towards debris reduction education and outreach around the Gulf of Mexico: audience- boaters/ anglers	
	E	Our knowledge of the locations of biological communities and our understanding their status ("health") in the waters of much of the Gulf of Mexico is poor, making efforts to conserve, protect, and manage resources often based on guesses or—potentially worse—based on only the portion we do know about.	Florida Oceans and Coastal Resources Council, FY 2007-2008 Annual Research Plan.	Increased demand by coastal 'users' for marine mapping of unmapped areas - target general public and state/federal legislators.	
	E	Marine debris, related to themes 2-5, is almost overwhelming. Having deposits on aluminum, glass, and metal products could help alleviate this global problem, as well as continuing to implement education programs within our public/private precollege schools is essential in making behavior changes. This global problem of marine debris could also be reduced by implementing a public awareness campaign as cited above concerning the value of the world's ocean and its watersheds to everyone's daily lives.	NOAA, www.noaa.gov; NOAA Hurricane Center, www.nhc.noaa.gov; US Department of Interior www.doi.gov; National Park Service www.nps.gov; US Geological Survey www.usgs.gov; US Fish and Wildlife Service www.fws.gov; Bureau of Land Management www.bim.gov; US Ocean Action Plan (2004) www.ocean.ceq.gov/actionplan.pdf; US Ocean Report Card (2007) www.jointoceancommission.org; • U.S. Commission on Ocean Policy (2004), www.oceancommission.gov • COSEE, www.cosee.org • COSEE, National Geographic Society, NOAA, College of Exploration (2005), www.coexploration.org/oceaniteracy/docuemnts • Per Oceans Commission (2003), America's Living Oceans: Charting a Course for Sea Change. A Report to the Nation. Arlington, VA 166 pp	Curb-side recycling in more communities/cities and recycling areas within parking lots of grocery stores- target the general public, thereby enhancing their efforts for having a cleaner, healthier, safer, and prettier environment. We can and should all be better environmental stewards.	
	E	Historical lack of a holistic Gulf Ecosystem" perspective, and the associated limitations on communications among scientists and decision makers around the Gulf of Mexico.	Examples of all of these may be found in presentations given during the Gulf of Mexico restoration team's state-by-state workshops. These have been posted on the GOMA working website.	A regular framework for facilitating ongoing information flow among scientists, resource managers and decision makers across the Gulf of Mexico ecosystem.	
	E	Littering the coastal landscape (2, 3, 5)	Beach sweep data by BTNEP, Lake Pontchartrain Foundation, etc.	Enforcement of local and state littering ordinances and/or statutes.	
	E	Beach litter, especially cigarette butts and plastics reduce aesthetic value and are marine hazards	Publicity from local events i.e. "Keep the Trash Out of the Splash"	More accessible litter receptacles - and fines for offenders - Everyone	
	E	Litter / trash (plastic bags, bottles) along beaches (water quality for healthy beaches and shellfish beds)	www.texasep.org/html/lnd/lnd_7bch_trash.html www.beachcleanup.org/trash.html www.epa.gov/owow/oceans/factsheets/fact2.html	Behavior change - proper disposal of trash, especially plastic	Measure - less trash picked up during beach clean up days; Intended audience - general public
	E	marine debris and associated water quality issues (theme 2 and 5)	Ocean Conservancy / International Coastal Cleanup / Ocean Revolution	Behavior change: automatically look and request recycling containers; Target: general public; Potential pilot project: monitored recycling containers in strategic places (where normally would not find a recycling container) and for strategic/indicator items (these items would be determined by the location)	
2	**HI**	Significant reduction in functionality of coastal and marine ecosystems to provide both ecological services as well as human well-being (i.e. fragmentation of habitats, wetland reductions, decreased water quality)	NSF and other scientific publications	More interagency management and coordination between State and Federal agencies as well as more participation of the public in decision making.	
	HI	Importance of the coastal wetlands in protecting from storm surge and as habitat for animals and humans - Theme 3 and 4	BTNEP has good resources on themes 3 and 4	not sure of an appropriate action for the public to take	
14	**N**	Watershed nutrient-regulation and control efforts are almost universally choosing to ignore nutrient fate and resulting effects on coastal receiving waters when establishing regulatory limits or BMPs or otherwise attempting to control nutrient loads.	?	Federal and State nutrient efforts identify the areas along nutrient 'fate paths' where the effects are greatest, then take steps based upon the effects at that most sensitive area. Take aggressive steps to provide sufficient understanding of the systems to be able to identify, measure, and assess the effects of nutrients on all community types– target general public and federal and state regulators	
	N	Increasing nutrient inputs	http://www.dep.state.fl.us/gulf/files/files/ReductionsLoading_Mississippi.pdf	Reducing residential use of fertilizers/lawn chemicals - general public including youth	
	N	Nutrients entering watersheds (urban and Ag)		Ag folks in LA would have a better understanding of their connection to the GOM and use less fertilizers and pesticides in production.	
	N	Nutrient inputs affect beaches and shellfish beds	http://www.epa.gov/waterscience/criteria/nutrient	BMPs used by communities, i.e. sewage treatment and presence of sewage lines	
	N	Watershed nutrient-regulation and control efforts are almost universally choosing to ignore nutrient fate and resulting effects on coastal receiving waters when establishing regulatory limits or BMPs or otherwise attempting to control nutrient loads (except for the Mississippi River).	Pew Oceans Commission: Coastal Sprawl: The Effects of Urban Design on Aquatic Ecosystem in the United States. www.pewoceans.org. Combined Sewer Overflows: EPA webpage: http://cfpub.epa.gov/npdes/home.cfm?program_id=5 National Estuarine Eutrophication Assessment Report: http://ccma.nos.noaa.gov/publications/eutroupdate/.	Federal and State nutrient efforts identify the areas along nutrient 'fate paths' where the effects are greatest, then take steps based upon the effects at that most sensitive area. Take aggressive steps to provide sufficient understanding of the systems to be able to identify, measure, and assess the effects of nutrients on all community types- target general public and federal and state regulators More prudent use of fertilizers to prevent runoff, and support of local/municipal/State/Federal regulations and/or guidelines/BMPs towards this end. Increased implementation of agricultural BMPs, riparian buffer zones, and wetland restoration. Improved infrastructure planning: maintenance and upgrades to municipal wastewater treatment plants, the elimination of combined sewer systems, and improved stormwater management. Messages to homeowners for the following BMPs: 1. Limit use of home lawn fertilizers 2. Maintenance of home septic systems 3. Boaters: proper use of sewage pump out stations at marinas	

	N	Improper land, air, and water practices results in over-nutrification of our waterways and ultimately the bayous, marshes, estuaries, and world's ocean. These practices may range from improper fertilizer applications through farming, golf courses, or in private homes-as well as improper greenhouse gas emissions. These improper uses of the land such as deforestation or burning too much fossil fuel result in excessive greenhouse gas emissions. This problem directly affects all five GOMA priority them areas.	NOAA, www.noaa.gov; NOAA Hurricane Center, www.nhc.noaa.gov; US Department of Interior www.doi.gov; National Park Service www.nps.gov; US Geological Survey www.usgs.gov; US Fish and Wildlife Service www.fws.gov; Bureau of Land Management www.bim.gov; US Ocean Action Plan (2004) www.ocean.ceq.gov/actionplan.pdf; US Ocean Report Card (2007) www.jointoceancommission.org; • U.S. Commission on Ocean Policy (2004), www.oceancommission.gov • COSEE, www.cosee.org • COSEE, National Geographic Society, NOAA, College of Exploration (2005), www.coexploration.org/ocealiteracy/docuemnts • Per Oceans Commission (2003), America's Living Oceans: Charting a Course for Sea Change, A Report to the Nation, Arlington, VA 166 pp.	Reducing greenhouse gas emissions, to include improving land use practices-target the general public and enhance our K-20 education process concerning global change. The implementation of regional, public awareness programs would go a long way" over the next 15 to 20 years in making a difference in all peopl becoming more aware and better understanding the relevance of the world's ocean and its watersheds to their daily lives.	
	N	Changes in coastal nutrient loading are leading to increased eutrophication of coastal waters and areas of low dissolved oxygen resulting in the loss of habitat, (e.g., limiting light for submerged aquatic vegetation), and the loss of coastal and marine fisheries resources.	Florida Oceans and Coastal Resources Council, FY 2007-2008 Annual Research Plan.	Increased demand by coastal 'users' for improved monitoring that is designed to address existing problems and assess the health of coastal ecosystems - target general public and state/federal legislators.	
	N	lack of definition of "nitrogen sensitive waters" (theme 5)	"Green That House" television show on TLC		
	N	Excess nutrients creating eutrophic conditions	PSAs regarding runoff	Better treatment of wastewater - Municipal and industrial dischargers	
	N	Runoff/nonpoint source pollution due to development is degrading water quality which limits the critical coastal habitats (e.g. underwater grasses, etc.). Themes 1, 2, 3, 4, 5)	LA Times.Com: Altered Oceans 5 Part Series. http://www.latimes.com/news/local/oceans/la-oceans-series,0,7842752.special EPA nonpoint source pollution controls: http://www.epa.gov/owow/nps/toolbox/products.htm http://www.epa.gov/gmpo/edresources/resource.html	Reduce fertilizers and pesticide use, water conservation -- general public Protecting wetlands and marsh grasses from development -- politicians Raising awareness of school children on the linkages between the Gulf habitat and their every day lives -- school kids	
	N	Excessive application of fertilizers to lawns	EPA, Florida Yards & Neighborhoods Program		
	N	Non-point sources of pollution (nutrients and sediment) are degrading coastal areas (theme 2 and 5)	US Commission on Ocean Policy (2004) An Ocean Blueprint for the 21st Century	People adopt appropriate landscaping practices (e.g., Florida Yards: http://floridayards.org/).	I really think we should focus on local water bodies that people can relate to rather than the Gulf as larger entity. This could be patterned on the "My River" ads from the St. Johns River, but made for various sites around the gulf. The key is building an affinity, a sense of pride, and sense of ownership. For a few examples: Mobile Bay: My Bay; Apalachicola/Suwannee River: My River; Mississippi River: My Delta; Louisiana: My Bayou; Padre Island Texas: My Island
	N	Non-point sources of pollution (pesticides, pathogens, toxics, others) are degrading coastal areas (theme 2)	EPA Documents: http://www.epa.gov/owow/nps/facts/point5.htm	People adopt appropriate landscaping practices (e.g., Florida Yards: http://floridayards.org/).	I really think we should focus on local water bodies that people can relate to rather than the Gulf as larger entity. This could be patterned on the "My River" ads from the St. Johns River, but made for various sites around the gulf. The key is building an affinity, a sense of pride, and sense of ownership. For a few examples: Mobile Bay: My Bay; Apalachicola/Suwannee River: My River; Mississippi River: My Delta; Louisiana: My Bayou; Padre Island Texas: My Island
	N	Affects non-point source pollution from residential and urban areas has on coastal systems (themes 2, and 5)	UF/IFAS Florida Yards and Neighborhood Program: http://hort.ufl.edu/fyn/ NEMO Website	Developers/ city planners must incorporate native landscaping/ vegetative buffer zones/swales/ etc in any new residential/ urban developments along the coast to reduce runoff onto impervious surfaces (incorporate more required trainings for certification): audience- developers/planners; b. Tax incentives for homeowners who can demonstrate they have incorporated landscaping BMPS: audience-home owners; increased network of monitoring stations around Gulf that can detect changes in nutrient levels to increase understanding of nutrient effects: audience-researchers/land managers	
4	O	Needless repetition of coastal environmental initiatives, like databases, among federal agencies and other entities (i.e. reinventing the wheel")	Examples of all of these may be found in presentations given during the Gulf of Mexico restoration team's state-by-state workshops. These have been posted on the GOMA working website.	Consolidation of databases and conservation initiatives according to a needs assessment done independently of individual agencies.	
	O	climate aggravation due to air-conditioner overuse	(not necessarily related to an above theme, but an interesting docu-movie "Who Killed the Electric Car?")	Behavior change: people select a house (and/or office) based on energy efficiency; Target: general public, realtors, developers	
	O	The balance between development and the environment is a challenge to understand and maintain (themes 2, 3, 4, and 5)		Behavior change = More advocacy for legislation that favors the environment… John Q. Public	
	O	Wasted energy (folks that don't turn off lights leading to increases light pollution and power usage, wasted trips, not recycling)	There is numerous info on the other 2; some cute stuff was created by the Puget Sound action group	People would recycle, turn off lights and make the most efficient use of travel time.	
9	R	Unsustainable ratio between funding between development and conservation (i.e. conservation dollars are woefully inadequate to keep up with the pace of habitat/resource destruction); all themes above [goma pit].	Congressional Commission on Ocean Policy (Ocean's Commission Report) and Pew Ocean Commission	More public investment in conservation and restoration.	
	R	Destruction of coastal wetlands	http://www.epa.gov/Region6/6wq/at/cwppra.htm; http://www.utexas.edu/features/2006/coastal/index.html	Urban area planning to include disincentives for developing coastal areas - city managers	
	R	Inappropriate development in coastal wetlands by form and function (1, 2, 3, 5)	State Departments of Environmental Quality (water quality), Wildlife and Fisheries (oyster fishery), Health and Hospitals (oyster monitoring program), Natural Resources (coastal use permitting)	More appropriate form and function development in the coastal zone, e.g.. no camps/structures built on grade in flood or storm surge prone areas.	
	R	Loss of coastal wetlands and associated productivity		Adoption of flexible zoning ordinances/"green" zoning ordinances which promote/require smart growth, mixed use and green development - local government & developer	
	R	Loss of coastal and wetland habitat	Northern Gulf of Mexico Seagrass Status and Trends Report, Developed by the U.S. Environmental Protection Agency Gulf of Mexico Program Office And U.S. Geological Survey National Wetlands Research Center http://www.epa.gov/gmpo/presentations/seagrass/mc-seagrass.html	More public support for conserving and restoring Gulf coastal habitats - measure through public opinion polling	
	R	Degradation of existing coastal and wetland habitat	Public Health: see documents at http://www.epa.gov/gmpo/pubhealt.html	More public support for conserving and restoring Gulf coastal habitats - measure through public opinion polling	
	R	Shoreline erosion is causing loss of habitat and property	Shoreline erosion (University of South Alabama and GSA Research, Mobile Press Register)	Better education on the value of beaches and dunes (more programs like grasses and classes) more public involvement.	
	R	Hardening of shorelines	Shoreline Restoration http://www.nwfwmd.state.fl.us/pubs/shoreline/shoreline.htm	In appropriate sites regulators and consultants would automatically recommend the use of living shorelines. Target: coastal homeowners, regulators, consultants	
	R	Wetland mitigation projects are not always successful and are not always in the same watershed.	DISL studies and ADEM and ADCNR staff reports	Education of the public about the value of wetlands and less fill application by developers.	
9	WQ	Lack of management/control of septic systems for camps in coastal waters (1, 2, 5)	State Departments of Environmental Quality (water quality), Wildlife and Fisheries (oyster fishery), Health and Hospitals (oyster monitoring program), Natural Resources (coastal use permitting).	Enforcement of sanitary code and/or people operating sanitary systems as they are supposed to.	

WQ	Coastal water resource monitoring is in many (perhaps most) areas woefully inadequate to provide meaningful information for efforts to address coastal problems.	?	Increased demand by coastal 'users' for improved monitoring that is designed to address existing problems - target general public and state/federal legislators.
WQ	Water quality affects beach openings and closings	http://www.epa.gov/waterscience/beaches	BMPs used by agricultural community
WQ	Water quality affects shellfish beds openings and closings	http://www.epa.gov/waterscience/shellfish	BMPs used by general public - especially water treatment
WQ	Poor water quality which can contribute to both of the above. It can also be a threat to public health	EPA 303d reports, found in the Surf Your Gulf Watershed link: http://www.epa.gov/gmpo/surfgulf/	More public support for conserving and restoring Gulf coastal habitats - measure through public opinion polling
WQ	Poor water quality and high rain events causes oyster bed closures	ADEM and Public Health water quality reports	Better education programs on non-point source pollution in K-12 and adult education including public officials and private industry. More watershed local groups.
WQ	Coastal water resource monitoring is in many (perhaps most) areas woefully inadequate to provide meaningful information for efforts to address coastal problems related to nutrient pollution resulting in a lack of knowledge about biological communities and their health. This lack of knowledge limits our ability to comprehensively conserve, protect, and manage these resources.	Clean Coastal Waters: Understanding and Reducing the Effects of Nutrient Pollution (National Research Council, 2000)	Increased demand by coastal 'users' for marine mapping of unmapped areas and other habitat assessment efforts to increase knowledge of coastal biological communities- target general public and state/federal legislators.
WQ	Increasing water consumption and diversion	http://www.twdb.state.tx.us/publications/reports/State_Water_Plan/2007/2007StateWaterPlan/2007StateWaterPlan.htm http://www.texaswatermatters.org/water_planning.htm http://www.tpwd.state.tx.us/publications/pwdpubs/pwd_pl_e0100_0867/water_priorities/conserve_water/	Reducing water usage-general public including youth
WQ	Red tide effects cause major problems for coastal Florida (residents and tourists alike) (themes 1, 2, and 5?)		Behavior change = This is a tough one, as the link between pollution and the beginnings of red tide are still debated. However, most publications I've seen tend to favor the hypothesis that coastal pollution exacerbates an existing natural phenomenon. Therefore, I'd target homeowners to reduce/eliminate over fertilization of lawns. It's a simple start, but you have to start somewhere. I see this type of education already happening, though, so I think the message is getting out there to some extent.

2007 June EEN Meeting - Behavior Changes for the Gulf

	Behavior Change	Topic	Votes
N	A solution to water pollution in Gulf areas	Nutrients	12
	I will reduce nutrients flowing to the gulf by a) using fertilizer wisely and b) making sure my septic system works properly		
	Farmers Use Precision Farming to reduce N @ P runoff		
	Reducing nutrient inputs (fertilizing - behavioral change)		
	Reduce the amount of fertilizer being used		
	I'd like to see planning commissions, counties, states, developers, & the public build more water conscious development (e.g. reduce nutrient-runoff) & less irrigation		
	Reduced nutrient loads to the Gulf form over-fertilization by homeowners		
	Improve water quality by reducing fertilizer & pet waste (e-coli)		
	Proper lawn fertilization or none at all		
	Use fertilizer properly		
	reduce/Stop pesticides use - it ends up in Gulf water		
	Use of Native Plants so that water & fertilizer use is reduced plus it is better habitat		
CR	Responsible Planning & Development to conserve our natural resources	Restoration	10
	Elected officials (county commissioners) voting responsibly to protect environmentally sensitive areas from development	Development	
	Protect our wetlands. Stop making excuses for wetland fill and development. Why don't we just say No.	Resiliency	
	Population growth & development - lack of land use planning - restrained growth smaller foot prints		
	Conserving Natural Buffers along coastal shorelines		
	Research (smart code) incentives to encourage green building & smart growth (sustainable design) in coastal areas: adopt energy code of international building code connect: GB saves money & pollution effects of building		
	Reduce coastal development		
	focus on sustainable development on coast and retention of unique coastal communities		

	consider employment of non-impervious alternatives in replacement or construction		
	reduce use of seawalls jetties bulkheads		
E	I will recycle plastics _	Education	5
	A reduction in marine debris in the Gulf of Mexico & near coastal waters		
	Everything you take to the beach, take home w/you i.e. trash fishing line		
	Reduction of litter along our coasts		
	Stop dumping human waste in Gulf - sewage & garbage		
O	Vote for environmentally responsible officials - see voting record on environmental issues - have environmental issue debates	Other	2
	More formal and informal programs/curriculum relating to ocean observing		

		August 6, 2007 Messaging Activity	NGI Workshop, Biloxi
		Problem	**Supporting Documentation**
6	**CR**	Building in Hazard Areas -- failing to reserve waterfront for water dependent activities or green spaces	DMR wetlands fill application database
	CR	Development in Floodplains in general, despite regulations	DMR wetlands fill application database
	CR	Lack of knowledge for Hurricane Preparedness -- e.g., animal evacuations	Katrina experience
	CR	New development & redevelopment without consideration of resiliency	SunHerald
	CR	Hardening of shorelines	observations NRC pub
	CR	Lack of Ecosystem Management	US Ocean and Pew Commissions
8	**E**	Litter	Observations -- long traffic light stops
	E	Loss of Heritage, museums, cultural activities, festivals	
	E	Lack of Central GCOOS Learning Center	None existing at time
	E	Under use and underexposure of Graduate Students	GCOOS experience
	E	CELCs not well networked and communicating with each other and NEPs, NERRs etc	
	E	Lack of Education beyond one's immediate region (e.g., hypoxia source)	
	E	Lack of knowledge on natural hazards for elementary school -- understand lat and long to track hurricane	already taught it at 7th and 8th -- sure 4th graders could get it and all in between

	E	Lack of knowledge on coastal hazards in media regularly	past SunHerald
	N	Excessive application of fertilizers to lawns	EPA, Florida Yards & Neighborhoods Program
	O	Mindless transportation planning	Studies on need for regional mass transit
2			
	O	Evacuation Plan Routes train wrecks	see Orleans Parish plan; 8, 18 hour horror stories
	R	Significant reduction in functionality of coastal and marine ecosystems to provide both ecological services as well as human well-being (i.e. fragmentation of habitats, wetland reductions,	NSF and other scientific publications
5		decreased water quality)	
	R	Fragmented (lack of holistic) approach to management of coastal and marine resources (all 5 themes above) causing inadequate policy development and implementation (i.e. single species management, political boundaries rather than ecological boundaries)	Congressional Commission on Ocean Policy (Ocean's Commission Report) and Pew Ocean Commission
	R	Unsustainable ratio between funding between development and conservation (i.e. conservation dollars are woefully inadequate to keep up with the pace of habitat/resource destruction); all themes above [goma pit].	Congressional Commission on Ocean Policy (Ocean's Commission Report) and Pew Ocean Commission
	R	Loss of Tree Canopy and biodiversity.	USDA NRCS, Arbor Day
	R	Dead Trees	
	WQ	Wastewater Management	
3			
	WQ	Stormwater management -- from hurricanes/oceans and rains	personal observation
	WQ	Lack of centralized wastewater treatment systems	

Behavior Change	Solutions
Build in safe low hazard places only	reserve V Zone for Green Spaces -- politically difficult ; see flash.org
Understanding that its WQ, direct hazard problem, evacuation problem, impact to neighbors -- all connected	Government incentives policy improvements and Insurance premiums
Lessons Learned -- need more days clothing and supplies. Need communications redundancy.	
Voluntary adherence to smart code/smart growth and pollution prevention principles	
Living shorelines -- alternative erosion protection; no wake zones (incentive and regulatory)	
Better communication between management agencies	
No more littering	Education, Bottle Deposit color coded
Keep public support going for heritage elements; combine art with interpretative trails	Ecotourism and general public
More people will be able to use a main central GCOOS Virtual Learning Center -- one-stop shop	
Build familiarity of technology and of teaching it	University faculty (e.g., NGI members), grad students, researchers, CELC networked and one for each state
More effective communication and collaboration	
More education up watersheds	

10 institutions contributing 5 each on coastal hazards

Get out of car, alternative

shelter in place or nearby, or build to not have to evacuate

More interagency management and coordination between State and Federal agencies as well as more participation of the public in decision making.

More ecosystem based management approaches to natural resource administration (i.e. fisheries councils steering away from single species management, permitting being more inclusive of cumulative impacts to the ecosystem as a whole)

More public investment in conservation and restoration.

TOD Transit Oriented Development (incentive driven)

Homeowners plant native species; discourage quick cover invasives

Plantings, sustain nurseries with diversity -- master gardeners & naturalists

Local Boards Use inexpensive alternative treatments

Smart Growth actions given stormwater mitigation credits

Smart Growth actions given stormwater mitigation credits

Dr. Kevin White, USA Engineering - resource

see COOL -- rain drop into community

Target Audience

Individuals building houses, public officials, developers

water and marsh front property owners, boat operators

elected officials, developers

Researchers, data processors, teachers

CELCs, NEPs, NERRs, etc (with Des Moines and MS River)

all of the above

NGI, GCSC, MSU Extension, etc.

Individual homeowners, master gardeners

planners, developers, engineers